

REMARKS

The claims now presented for consideration are Claims 1-5, 7-23, and 25-44, the independent claims being Claims 1, 4, 23, 29, 35, 36, 37, 38, and 40. Claims 6 and 24 have been canceled without prejudice to or disclaimer of the subject matter therein. Claims 1-5, 7-23, and 25-34 have been amended to improve their form and to more clearly recite the present invention. Claims 35-45 have been newly added.

In view of the above amendments and newly presented claims, and the following remarks, favorable reconsideration and allowance of the above application is respectfully sought.

Initially, Applicants acknowledge the Examiner's indication that the application contains allowable subject matter, specifically that claims 3, 7-9, 11, 12, 17-21, 27, and 28 would be allowable if rewritten in independent form, and that claims 29-34 are allowed. With regard to claims 3, 7-9, 11, 12, 17-21, 27, and 28, Applicants have added claims 35-44 which directly correspond to old claims 3, 7-9, 11, 12, and 17-21, rewritten in independent form with minor amendments solely to improve their form. These claims are now allowable. With regard to claims 29-34, Applicants have amended these claims solely to improve their form. As such, these claims remain allowable.

In the Office Action, claims 1 and 2 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 6,088,134 to Schmidt (Schmidt) and claims 1, 2, 4-6, 10, 13, 15, 16, and 22 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 4,769,718 to Imamura (Imamura). Also, claim 14 was rejected under 35 U.S.C. § 103(a) as obvious over Imamura in view of Schmidt and claims 23-26 were rejected under 35 U.S.C.

§ 103(a) as obvious over Schmidt. In view of the above amendments and reasons set forth below, Applicants' respectfully traverse these rejections.

As now recited in independent claims 1, 4, and 23, the present invention relates to an image reading imaging optical system (claim 1) and an image reading apparatus (claims 4 and 23) having, *inter alia*, (i) an image optical element having a plurality of off-axial reflecting surfaces and (ii) an angle of field. The image optical element has a plurality of off-axial reflecting surfaces differing in the direction of incidence and the direction of emergence of a reference axis ray from one another and having curvatures. Accordingly, the invention as now set forth in claims 1, 4, and 23 is directed an optical system with an angle of field, and it is the presence of an angle of field, which presents unique problems for imaging optical systems, that Applicants have addressed. Specifically, Applicants submit that at least the plurality of off-axial reflecting surfaces disclosed in independent claims 1, 4, and 23 are a novel way to contemplate and correct for the unique problems. Each of claims 1, 4, and 23 have been amended to more clearly recite these features.

Applicants submit that cited art does not teach or suggest at least these features.

Schmidt is directed to a swath scanning system using an optical imager and discloses a light source for illuminating a document and an optical element for receiving light from the document and directing it toward a detector array which produces a corresponding array of electrical signals. The optical element includes plural reflecting surfaces. According to Applicants' understanding of Schmidt, however, the system of

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Schmidt is a telecentric system in which the principal rays are in parallel with an optical axis. (See Col. 8, ll. 20-24). As such, the system of Schmidt, does not disclose a system having an angle of field, as required by independent claims 1, 4, and 23.

Imamura is directed to an image processing apparatus and discloses an image processing apparatus equipped with an original document illuminating lamp, a reflector arranged in association with the lamp, and a photosensitive member adapted to receive light from an original document. Specifically, Imamura teaches reducing reflection performance due to wavelength by providing a color-compensating coating layer 6 on a reflector 3. (See Col. 8, ll. 13-38.) According to Applicants' understanding, the reflector 3 of Imamura guides light from a lamp 1 to an original picture 5, a task different than that of the image optical element of claims 1, 4, and 23. Also, Applicants' submit that by reflecting the light from the lamp 1, an angle of field between the lamp 1 and the original picture 5 cannot be defined, as required by independent claims 1, 4, and 23. As such, Applicants' submit that Imamura does not teach or suggest at least the features of claims 1, 4, and 23 discussed above.

Accordingly, Applicants' submit that Schmidt and Imamura, whether taken alone or in combination, fail to teach or suggest at least the feature of a system having an angle of field, as required by independent claims 1, 4, and 23. As such, Applicants respectfully submit that each of independent claims 1, 4, and 23 is distinguishable over the applied art of record.

Claims 2, 3, 5, 7-22, and 25-34 depend either directly or indirectly from one of claims 1, 4, and 23 and are therefore patentable over the art of record for reasons noted

above with respect to claims 1, 4, and 23. In addition, each recite features of the invention still further distinguishing it from the applied art. Favorable and independent consideration thereof is respectfully sought.

Applicants respectfully submit that all outstanding matters in the above application have been addressed and that this application is in condition for allowance. Favorable reconsideration and early passage to issue of the above application are respectfully sought.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



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